REMARKS

Claims 1-5 and 8-17 are pending in the application. Applicants have amended Claim 1 and have canceled Claim 12, leaving Claims 1-5, 8-11, and 13-17 for consideration upon entry of the present Amendment. The specification has been amended as described in detail below. No new matter has been introduced by these amendments.

Claim 1 has been amended to more clearly describe how the isolation ratio was determined. Support for the language may be found in the third full paragraph on page 35 and the paragraph bridging pages 35 and 36 of the Specification as filed.

Table 1, on pages 29-31 of the Specification, has been amended to delete Examples 5 and 7-15. Likewise, Table 2, on page 38 of the Specification, has been amended to delete Examples 5 and 7-15. The amendments were made in response to an objection to the disclosure in the Office Action dated 10/9/2002.

Replacement paragraph page 8, line 12 of Amendment Paper No. 12

Applicants define the isolation ratio according to the amended Specification page 8, lines 12-24 paragraph as amended in Paper No. 12. The amended Specification paragraph reads as follows:

> The number of the particle containing the specified element which synchronously emits light caused by the specified element with light caused by carbon atom, hereinafter referred to as synchronous light emission particle, and the number of the particle containing the specified element which emits light caused by the specified element without synchronous light emission caused by carbon atom, herein after referred to as non-synchronous light emission particle, are counted. The ratio of the number of non-synchronous light emission particle to the sum of the number of the synchronous and non-synchronous light emission particles is defined as the isolation ratio of the specified element in percent by number.

Applicants retract, without prejudice, statements made in paper No. 5 that the isolation ratio is "clearly defined" by the original Specification.

Objection to the Specification

The Specification has been objected as unclear in regards to the understanding of synchronous light emission particle and non-synchronous light emission particle. As defined

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in the Specification and claims, the toner comprises a resin binder and not less than 0.1% by weight of an element selected from the group consisting of copper, chromium, iron, zinc, and molybdenum; wherein the toner has an isolation ratio of the element of not more than 10% by number, where the isolation ratio of the element is determined by measuring light emission voltage caused by carbon and the element of particles present in the toner with a fluorescent X-ray analysis and defined as 100 times the number of particles exhibiting emission from the element but not exhibiting emission from carbon divided by the sum of the number of particles exhibiting emission from the element but not exhibiting emission from carbon and the number of particles exhibiting emission from the element and exhibiting emission from carbon. (Emphasis added) The "element" can be in the form of pigment, charge controlling agent, metal oxide, or in the form of elemental metal. (Specification paragraph bridging pages 5 and 6)

The Examiner has alleged that there would be no particles present in the toner that emit light caused by the specified element without synchronous light emission caused by carbon. The Examiner states in the Office Action dated 10/09/2002:

> The specification at page 27 discloses that the toners in examples 6—8 are prepared by a melt-kneading a mixture comprising a binder resin and Cuphthalocyanine. It appears that the element Cu is in the form of Cu-phthalocyanine. Thus, there are no particles containing only the element Cu, but particles containing the element Cu in the form of Cu—phthalocyanifle (e.g., particles containing only Cuphthalocyanine and toner particles comprising Cu-phthalocyanine and a binder resin). Based on the above discussed teachings in the specification, the particles containing only Cuphthalocyanine "emit light caused by the element Cu with light caused by the carbon atoms" present in Cu-phthalocyanine. The toner particles emit light caused by the element Cu with light caused by the carbon atoms present in Cu-phthalocyanine and in the binder resin. There would be no particles present that emit "light caused by the specified element without synchronous light emission caused by carbon atom." Thus, the isolation ratios for the toners in examples 6-8 would be zero, which is not the value reported in instant Table 2. Accordingly, it is not clear how the isolation ratios of the element Cu in examples 6-8, let alone of any element which is part of an organic compound, are determined from the definition of the isolation ratio disclosed in the instant specification.

Applicants respectfully contend that in the analysis of toner particles, the particles are of two types: one type of particle comprises a resin binder and an element, whether in elemental form or in the form of a pigment, charge controlling agent, or metal oxide; the second type of

particle comprises the element alon , again either in the form of a pigment, charge controlling agent, metal oxide or in elemental form. In relation to the light emission of particles, the first type "emits light caused by carbon atom". The second type includes particles comprising the element without the resin. The second type "emits light caused by element" even though the source of the element may be a carbon containing compound.

Applicants contend that the terms discussed above are clear from the Specification. For example, the third paragraph on page 7 of the Specification as filed, and lines 12-24 on page 8 of the Specification state:

> The "isolation ratio" of the specified element is a ratio (% by number) of the number of the particles containing the specified element other than the colored particle, for example, particles of the magnetic substance and the charge controlling agent, to the whole number of particles of the toner...
>
> The number of the particle containing the specified element which synchronously emits light caused by the specified element with light caused by carbon atom, hereinafter referred to as synchronous light emission particle, and the number of the particle containing the specified element which emits light caused by the specified element without synchronous light emission caused by carbon atom, herein after referred to as non-synchronous light emission particle, are counted. The ratio of the number of non-synchronous light emission particle to the sum of the number of the synchronous and non-synchronous light emission particles is defined as the isolation ratio of the specified element in percent by number.

(The colored particle is the resin) These two paragraphs support the determination of isolation ratios for element sources that contain carbon. The examples of the Specification further support this notion. For instance, Example 6 contains copper phthalocyanine type cyan pigment and a polyester resin. The isolation ratio for Example 6 was determined to be 8.6. As can be seen with this example, the light emission voltages caused by the "element" particles are from particles of the element source (here copper phthalocyanine type cyan pigment) without the resin (polyester). Particles of Example 6 containing both the element (copper phthalocyanine type cyan pigment) and resin (polyester) provided the light emission voltages caused by "carbon" particles. Accordingly, the Applicants respectfully contend that the specification is clear in regards to the emission of light from "element" particles and "carbon" particles.

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Claim Rejections Under 35 U.S.C. § 112, First Paragraph

Claims 1-5 and 8-17 stand rejected under 35 U.S.C. § 112, first paragraph, as allegedly containing subject matter that was not described in the specification is such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

In the Office Action dated 10/09/2002 the Examiner stated on page 6, paragraph 7:

> Applicants state that they "agree with the Examiner's interpretation that 'the element is part of the toner particles' but disagree / with the interpretation that the element is exclusively found within the colored resin particles of the toner." Based on applicants' interpretation, the element recited in the instant claims includes not only internal components (those components used in the formation of toner particles) but includes <u>external</u> additives that are added to the already made toner particles.

The Applicants respectfully point out that they have not suggested that the elements include external additives. Applicants' assertion is that the element is not exclusively found in the colored resin particles of the toner. This means that some of the element may not be found in the resin particle, while the rest is found in the resin particle. This notion is demonstrated by the isolation ratio, which is determined by measuring light emission voltage caused by "carbon" particles (particles containing resin and the element) and the light emission voltage caused by the "element" particles (particles containing the element source with no resin present in the particle). Therefore, the element is not exclusively found within the colored resin particles of the toner, but can be a particle on its own. Based on this interpretation the Applicants respectfully request reconsideration and removal of the Examiner's rejection.

Claim 1 has been amended to remove "particle emission analysis" and replaced with the language --measuring light emission voltage caused by carbon and the element of particles present in the toner with a fluorescent X-ray analysis--. Applicants contend that the amendment is sufficient to respond to the § 112, First Paragraph rejection regarding the determination of the isolation ratio.

Claims 1-5 and 8-17 stands rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to

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enable on skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use th invention.

The Examiner has stated on page 12 of the Office Action dated 10/09/02 that:

> the specification does not provide an adequate disclosure of how to determine the isolation ratio of an element that is in the form of an organic compound, such as Cu-phthalocyanine. Accordingly, it would require undue experimentation for one of ordinary skill in the art to determine the isolation ratio as defined in the instant claims for elements that are in the form of organic compounds, such as Cu— phthalocyanine.

Applicants respectfully disagree. As mentioned above in the last paragraph of page 9 to the first full paragraph of page 10, the measurement of particles exhibiting light emission voltage caused by the "element" corresponds to particles containing the element and no resin binder, whether the element source contains carbon or not. The element source may be a pigment, a charge controlling agent, metal oxide or elemental metal. (Specification, paragraph bridging pages 5 and 6) The measurement of particles exhibiting light emission voltage from "carbon" corresponds to the particles containing the element <u>and</u> the resin binder. Again Applicants contend that the Examples found in the Specification provide one source of support for the foregoing argument. Accordingly, the Applicants respectfully requests removal of the rejection over Claims 1-5 and 8-17.

<u>Claim Rejections Under 35 U.S.C. § 102(b) and/or 103(a)</u>

Claims 1-4, 8-12, 14, and 15 stand rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 5,376,493 to Kobayashi, as evidenced by ACS File Reg. No. 147-14-8.

Claims 1-4, 8-12 and 14 stand rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 5,856,055 to Ugai et al.

Claim 13 stands rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 5,856,055 to Ugai et al.

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Claims 1-3, 8-12, 14 and 17 stand rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 5,645,967 to Sato et al.

Claim 13 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Sato combined with U.S. Patent No. 5,037,715 to Hagiwara et al.

Claims 1-3, 5, 8-13, 14 and 17 stand rejected under 35 U.S.C. § 102(e) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 6,238,836 B1 to Nakamura et al.

Applicants respectfully traverse these rejections.

U.S. Patent No. 5,376,493 to Kobayashi (hereinafter "Kobayashi") generally describes a toner producing process comprising the steps of mixing a solvent, a first binding resin soluble therein, and particles of a coloring agent insoluble therein, with each other; dispersing the particles of the coloring agent in the binding resin while applying a shearing force thereto to obtain a dispersed substance; removing the solvent from the dispersed substance to obtain a coloring agent-binding resin composition in which the particles of the coloring agent are dispersed; mixing the coloring agent-binding resin composition with a second binding resin and a charge controlling agent; melt-kneading the mixture to obtain a kneaded substance; and forming toner from the kneaded substance (Abstract). The Examiner has called attention to Kobayashi Example 3 at column 12. (8 April 2002 Office Action, page 8, paragraph no. 11.)

U.S. Patent No. 5,856,055 to Ugai et al. (hereinafter "Ugai") generally describes an electrophotographic black toner containing carbon black in a good dispersion state as well as a combined charge control agent system including a specific azo iron metal compound and an oxycarboxylic acid metal compound. The toner is produced through polymerization in an aqueous system. (Abstract.) The examiner has called attention to Ugai's toners Q and R in Tables 2 and 3 at column 26 (8 April 2002 Office Action, page 11, paragraph no. 12).

U.S. Patent No. 5,645,967 to Sato et al. (hereinafter "Sato") generally describes a charge controlling agent composition for use in an electrophotographic toner. The charge controlling agent composition is obtained either by adding carbon during the preparation of the charge controlling agent or by mixing the charge controlling agent with carbon in the

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presence of a solvent. (Abstract.) The Examiner has called attention to Sato's Composition 30 in Table 4 at column 19, corresponding to Example No. 23 in Table 8 at columns 23-24 (8 April 2002 Office Action, page 14, paragraph no. 14).

U.S. Patent No. 5,037,715 to Hagiwara et al. (hereinafter "Hagiwara") generally describes a resin for use in electrophotographic toner, comprising a urethane-modified polyester resin (D) having a glass transition temperature ranging from 40° to 75° C, which is obtained by reacting a resin mixture composed of a polyester resin (A) having a number-averaging molecular weight of 1,000 to 15,000 and a hydroxyl value of 10 to 100 and a polyester resin (B) having a number-average molecular weight ranging from 1,000 to 5,000 and a sum of acid value and hydroxyl value of less than 10, in a weight ratio of (A)/(B) ranging from 20:80 to 60:40, with 0.3 to 0.99 molar equivalent of an isocyanate compound (C) per one molar equivalent of hydroxyl group of the polyester resin (A). (Abstract.) The Examiner has pointed to Hagiwara's Preparation Examples 3-7 (Table 3, columns 9-10) for their molecular weight properties (8 April 2002 Office Action, page 16, paragraph no. 15).

U.S. Patent No. 6,238,836 to Nakamura et al. (hereinafter "Nakamura") generally describes an electrostatic image developer, which is a toner composition containing colored resin particles comprising at least a binder resin, a colorant, and a charge control agent, wherein the binder resin is prepared from (1) an epoxy compound with a valence of 5 or more, (2) a polybasic acid compound having a valence of 2 or more selected from the group consisting of polybasic acids and/or acid anhydrides and/or lower alkyl esters thereof, and (3) a polyvalent alcohol having a valence of 2 or more (Abstract). The Examiner has called attention to Embodiment 6 at column 25, lines 3-25 and Table 3.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628, 631, 2 SPQ2d 1051, 1053 (Fed. Cir. 1987). Moreover, "[t]he identical invention must be shown in as complete detail as is contained in the * * * claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). Establishing a prima facie case of obviousness requires that all elements of the invention be disclosed in the prior art. *In re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A 1970).

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The Applicants respectfully contend that the arguments put forth in Paper No. 12 are sufficient to overcome the foregoing 35 U.S.C. § 102(b) and § 103(a) rejections. Specifically, the Applicants respectfully assert that the individual references and reference combinations detailed above cannot anticipate or render obvious their Claim 1 because the references do not expressly or inherently teach the Claim 1 limitation that "the toner has an isolation ratio of the element not more than 10% by number".

As mentioned above, the Specification provides sufficient disclosure to determine the isolation ratio as defined in Claim 1, even for an element source that contains carbon. As mentioned, the terms "carbon" and "element" describe the types of particles that provide the light emission voltage. A particle exhibiting light emission voltage caused by the "element" corresponds to particles containing the element and no resin binder. As shown in the examples, the element can be provided in the form of an organometallic compound, such as copper phthalocyanine type cyan pigment. A particle exhibiting light emission voltage caused by the "carbon" corresponds to a particle containing the element <u>and</u> resin binder.

As the determination of isolation ratio is clear, the Applicants request reconsideration of the Rule 132 declarations executed by Hiroshi Yamazaki on July 4 and July 29, 2002. Furthermore, the Applicants request reconsideration and removal of the rejections of Claim 1 based on the arguments put forth in Paper No. 12, namely that none of the references, alone or combined, anticipate or render obvious Claim 1 because they do not expressly or inherently teach the Claim 1 limitation that "the toner has an isolation ratio of the element not more than 10% by number". Given that Claims 2-4, 8-11, 13-15 and 17 include all the limitations of Claim 1, they too are patentable and nonobvious over the cited references.

Claims 1-4, 8-12, 14 and 16 stand rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 5,672,454 to Sasaki et al. as evidenced by ACS File Registry No. 1317-61-9.

Claims 1-4, 8-12, 14 and 15 stand rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 5,763,130 to Sasaki et al.

U.S. Patent No. 5,672,454 to Sasaki et al. (hereinafter "Sasaki '454") generally discloses a toner for developing an electrostatic latent image which includes at least

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particulate magnetic materials and a binder resin has no particulate magnetic materials on the surface of the toner.

U.S. Patent No. 5,763,130 to Sasaki et al. (hereinafter "Sasaki '130") generally discloses an encapsulated toner for heat-and-pressure fixing having a heat-fusible core material containing at least a thermoplastic resin and a coloring agent and a shell formed thereon so as to cover the surface of the core material. An amorphous polyester is used as the main component of the shell, and the amount of the amorphous polyester is normally 3 to 50 parts by weight, based on 100 parts by weight of the core material.

Applicants respectfully contend that Claim 1 has not been anticipated or rendered obvious over either Sasaki '454 or '130 as neither reference teaches the Claim 1 limitation that "the toner has an isolation ratio of the element not more than 10% by number". Given that Claims 2-4, 8-11, and 13-16 include all the limitations of Claim 1, they too are patentable and nonobvious over the cited references.

In view of the foregoing, it is respectfully submitted that the instant application is in condition for allowance. Accordingly, it is respectfully requested that this application be allowed and a Notice of Allowance issued.

In the event the Commissioner of Patents and Trademarks deems additional fees to be due in connection with this application, Applicants' attorney hereby authorizes that such fee be charged to Deposit Account No. 06-1130 maintained by the Applicant's Attorneys.

Respectfully submitted,

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